

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003321 A2

(51) International Patent Classification⁷: **C12N**
(21) International Application Number:
PCT/US2004/021637
(22) International Filing Date: 6 July 2004 (06.07.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/485,509 6 July 2003 (06.07.2003) US
60/485,607 7 July 2003 (07.07.2003) US

(71) Applicant (for all designated States except US): **ROGER WILLIAMS MEDICAL CENTER** [US/US]; 825 Chalkstone Avenue, Providence, RI 02908 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **QUESENBERRY, Peter, J.** [US/US]; 400 Cole Avenue, Providence, RI 02906 (US).

(74) Agents: **ROSENFELD, Jennifer, K.** et al.; Edwards & Angell, LLP, P.O. Box 55874, Boston, MA 02205 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS OF PRODUCING DIFFERENTIATED HEMATOPOIETIC CELLS FOR TREATMENT OF CYTOPENIA

(57) Abstract: The present invention generally provides methods for producing differentiated hematopoietic cells, including macrophages, platelets, and granulocytes, by adding cytokines to cultured synchronized bone marrow stem cells at specific phases of the cell cycle. The invention further provides differentiated hematopoietic cells produced by the methods of the invention, as well as methods for treating and/or preventing cytopenic states using the differentiated hematopoietic cells produced according to the methods of the invention.

WO 2005/003321 A2